

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Z. Jason Geng

Serial No.: To be assigned

Group Art Unit: To be assigned

Filed:

Examiner: To be assigned

For: METHOD & APPARATUS FOR OMNIDIRECTIONAL THREE DIMENSIONAL
IMAGING

Commissioner of Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Dear Sir:

Please amend the application as follows prior to examination on the merits.

IN THE CLAIMS:

Please cancel claims 1-6 and add new claims 7-10.

7. An improved imaging apparatus for generating a two dimensional image, comprising:
- a substantially hyperbolic reflective mirror configured to satisfy an optical single viewpoint constraint for reflecting a scene;
 - a image sensor responsive to said reflective mirror and that generates two dimensional image data signals; and
 - a controller coupled to the image sensor to control a display of two dimensional object scenes corresponding to said image data signals.

8. The improved imaging apparatus of claim 7, wherein said hemispherical image data signals generated by said sensor are projected from a single virtual viewing point at the focal center of said hyperbolic mirror.

9. The improved imaging apparatus of claim 7, wherein said substantially hyperbolic reflective mirror is a substantially convex mirror and wherein said image data signals generated by said sensor means are projected from a single virtual viewing point at the focal center of said convex mirror.

10. An omnidirectional stereo imaging system comprising:
a first camera that generates hemispherical image data signals;
a first substantially hyperbolic reflective mirror optically associated with said first signal generator such that said first camera views objects in an entire hemispherical field of view from a single virtual viewpoint at the focal center of said first reflective mirror;
a second camera that generates a second set of hemispherical image data signals;
a second substantially hyperbolic reflective mirror optically associated with said second camera such that said camera views objects in an entire hemispherical field of view from a single virtual viewpoint at the focal center of said second reflective mirror; and
a data generator responsive to said hemispherical image data signals from said first and second camera for generating three-dimensional data for objects in said hemispherical fields of view of said first and second reflective mirror.

REMARKS

New claims 7-10 have been added. No claims have been amended. Entry of this Preliminary Amendment before examination on the merits is therefore respectfully requested.

Respectfully submitted,



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